NOVEMBER/DECEMBER 2023

23UBT11 — CELL AND MOLECULAR DEVELOPMENTAL BIOLOGY

Time : Three hours Maximum : 75 marks

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SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Why is cell theory important?
2. Explain the features of prokaryotic cell.
3. List the functions of cell wall.
4. Classify flagella.
5. What is Chargaff rule?
6. Illustrate replication fork.
7. What is gap junction?
8. Summarize the significance of meiosis.
9. Define gastrulation.
10. Outline the development of zygote.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Make use of a diagram to illustrate the architecture of a cell.

Or

(b) Distinguish between prokaryotic and eukaryotic cell.

12. (a) Identify the functions of mitochondria.

Or

(b) Analyze the structure and functions of ribosomes.

13. (a) Organize the structural features of double helical structure of DNA.

Or

(b) Compare prokaryotic and eukaryotic translation.

14. (a) Identify the four types of cell signalling.

Or

(b) List the important check points in cell cycle.

15. (a) Identify the hormones that regulate spermatogenesis.

Or

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(b) Examine the factors affecting organogenesis.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the structure of a bacterial cell.

17. Appraise the ultra structure of plasma membrane.

18. Explain prokaryotic replication in detail.

19. Discuss the various stages of mitotic cell division.

20. Elaborate the process of fertilization.

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